Università di Firenze
Dipartimento di Biologia Vegetale

Università di Pisa
centro interdipartimentale
di ricerche agro-ambientali
C.I.R.A.A. Enrico Avanzi

II Workshop di Ecofisiologia vegetale

LA FLUORESCENZA DELLA CLOROFILLA: DALLA TEORIA ALLA (BUONA) PRATICA

2nd Plant Ecophysiology Workshop

CHLOROPHYLL FLUORESCENCE: FROM THEORY TO (GOOD) PRACTICE

Concetti e applicazioni dei metodi indagine della fluorescenza della clorofilla a negli studi degli stress delle piante. Implicazioni per l'agricoltura, l'ambiente e non solo.

Concepts and applications of investigation methods of chlorophyll a fluorescence in the study of plant stresses.
Implications for agriculture, environment and much more.

Con il patrocinio di:

Regione Toscana

ARSIA

AIPP – Associazione Italiana Protezione Piante

Società Italiana di Patologia Vegetale

Società Botanica Italiana

Fondazione Edmund Mach – Istituto Agrario di San Michele all'Adige

Società Lichenologica Italiana – S.L.I. – SLI

Società Italiana di Ortoflorofrutticoltura – ITALUS HORTUS – SOI

SISEF – Società Italiana Selvicoltura ed Ecofisiologia Forestale

Con il contributo di:

Lombard & Marozzini – strumentazione e sistemi per l'industria e la ricerca

WALZ

MINERVA s.a.s di Parenti Pierfrancesco & C., Pisa

25-26 MAGGIO 2009

RIASSUNTI DEI LAVORI
BOOK OF ABSTRACTS

Chlorophyll fluorescence quenching as a tool to screen olive cultivars tolerant to drought stress

Faraloni.C.[(1)], Cutino I.[(2)], Petruccelli R.[(2)], Leva A.R.[(2)], Traversi L.[(2)] and Torzillo G[(1)]

[(1)] *ISE, Istituto per lo Studio degli Ecosistemi, Consiglio Nazionale delle Ricerche, Via Madonna del Piano 10, 50019 Sesto Fiorentino (FI), Italy*

[(2)] *IVALSA, Istituto per la Valorizzazione del Legno e delle Specie Arboree, Consiglio Nazionale delle Ricerche, Via Madonna del Piano 10, 50019 Sesto Fiorentino (FI), Italy*

The measurements of fluorescence chlorophyll is considered a promising technique to rapidly quantify the response to physiological stress in higher plants.

Drought stress can be considered one of the most frequent environmental constraints causing the failure of newly planted trees. Olive tree (*Olea europaea*), a representative drought stress tolerant plant, is one of the most typical and economically relevant plant species grown in the Mediterranean area. However, as different cultivars may exhibit different drought tolerance level, the selection of the most drought tolerant cultivars acquires relevance.

The objective of this study was to determine whether information obtained with chlorophyll fluorescence measurements carried out on detached olive leaves subjected to dehydration *in vitro*, may be translated on the whole olive plant.

Results revealed that *in vitro* measurements were effective to evidence strong differences in the F_v/F_m ratio decline among the cultivars, following 24 hours of dehydration, and it was possible to distinguish different level of putative tolerances. Measurements carried out on whole plants of different cultivars confirmed, indeed, the results obtained *in vitro*. The results indicated that the chlorophyll fluorescence measurement represents a valid technique for a rapid screening of olive cultivars tolerance to drought stress.